

AMENDMENTS TO THE CLAIMS:

1-5 (Cancelled)

6. (Previously presented) A diaphragm type load detection sensor comprising:
a mounting portion attached to an installation plate;
a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied; and
a strain gauge provided on the strain generation portion, wherein
said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;
a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed;
said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction; and
said mounting portion is attached to the installation plate with a flexible resilient member interposed therebetween.

7. (Currently Amended) ~~A diaphragm type load detection sensor according to claim 1 in which said mounting portion is attached to the installation plate~~ A diaphragm type load detection sensor comprising:
a mounting portion attached to an installation plate with a flexible resilient member

interposed therebetween;

a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied; and

a strain gauge provided on the strain generation portion, wherein
said strain gauge has sensing elements evenly provided on substantially a whole
periphery thereof and positioned at predetermined distances from the center axis of the load
applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said
sensing elements are provided on a surface of the strain generation portion at such side that is
opposite to the side where said projection is formed;

said sensing elements have a pattern wherein the sensing element is disposed to receive a
strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive
a strain in the radial direction; and

said strain gauge has terminals provided outside of the sensing elements and is disposed
on the strain generation portion in such manner that said sensing elements are positioned on the
strain generation portion and said terminals are positioned on the mounting portion.

8. (Original) A diaphragm type load detection sensor according to claim 6 in which said flexible resilient member is formed from rubber material.

9. (Original) A diaphragm type load detection sensor according to claim 7 in which said flexible resilient member is formed from rubber material.

10. (Original) A diaphragm type load detection sensor according to claim 6 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

11. (Original) A diaphragm type load detection sensor according to claim 7 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

12. (Original) A diaphragm type load detection sensor according to claim 8 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

13. (Original) A diaphragm type load detection sensor according to claim 9 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

14-18 (Cancelled)

19. (Previously presented) A load detection unit comprising:

a diaphragm type load detection sensor;

a case;

a transmission assembly; and

a support member, wherein

said diaphragm type load detection sensor has a mounting portion, a strain generation portion provided on the mounting portion and a load applied portion formed at the center thereof to which a load to be detected is applied, and a strain gauge on the strain generation portion;

said case is attached to an installation plate for guiding the diaphragm type load detection sensor;

said transmission assembly transmits a load to be detected to the load applied portion of the diaphragm type load detection sensor;

said support member supports the transmission assembly on the case;

said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed; and

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction;

the load detection unit further comprising at least one of a flexible resilient member contained in the case and interposed between the mounting portion of the diaphragm type load detection sensor and the installation plate, or another flexible resilient member provided at such side of the transmission assembly that receives a load to be detected.

20. (Currently Amended) ~~A load detection unit according to claim 14 in which it further comprises~~ A load detection unit comprising:

a diaphragm type load detection sensor;

a case;

a transmission assembly; and

a support member, wherein

said diaphragm type load detection sensor has a mounting portion, a strain generation portion provided on the mounting portion and a load applied portion formed at the center thereof to which a load to be detected is applied, and a strain gauge on the strain generation portion;

said case is attached to an installation plate for guiding the diaphragm type load detection sensor;

said transmission assembly transmits a load to be detected to the load applied portion of the diaphragm type load detection sensor;

said support member supports the transmission assembly on the case;

said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed;

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction; and

said strain gauge has terminals provided outside of the sensing elements and is disposed on the strain generation portion in such manner that said sensing elements are positioned on the strain generation portion and said terminals are positioned on the mounting portion;

the load detection unit further comprising at least one of a flexible resilient member contained in the case and interposed between the mounting portion of the diaphragm type load detection sensor and the installation plate, and another flexible resilient member provided at such side of the transmission assembly that receives a load to be detected.

21. (Original) A load detection unit according to claim 19 in which said at least one of the flexible resilient member or another flexible resilient member is formed from rubber material.

22. (Original) A load detection unit according to claim 20 in which said at least one of the flexible resilient member or another flexible resilient member is formed from rubber material.

23–24 (Cancelled)

25. (Previously presented) A load detection unit according to claim 19 in which said transmission assembly is movably coupled to the load applied portion.

26. (Previously presented) A load detection unit according to claim 20 in which said transmission assembly is movably coupled to the load applied portion.

27. (Previously presented) A load detection unit according to claim 21 in which said transmission assembly is movably coupled to the load applied portion.

28. (Previously presented) A load detection unit according to claim 22 in which said transmission assembly is movably coupled to the load applied portion.

29. (Previously presented) A load detection unit comprising:

- a diaphragm type load detection sensor;
- a case;
- a transmission assembly; and
- a support member, wherein

said diaphragm type load detection sensor has a mounting portion, a strain generation portion provided on the mounting portion and a load applied portion formed at the center thereof to which a load to be detected is applied, and a strain gauge on the strain generation portion;

said case is attached to an installation plate for guiding the diaphragm type load detection sensor;

said transmission assembly transmits a load to be detected to the load applied portion of the diaphragm type load detection sensor;

said support member supports the transmission assembly on the case;

said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed;

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction; and

said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

30. (Currently Amended) ~~A load detection unit according to claim 14 in which A~~
load detection unit comprising:

a diaphragm type load detection sensor;

a case;

a transmission assembly; and

a support member, wherein

said diaphragm type load detection sensor has a mounting portion, a strain generation portion provided on the mounting portion and a load applied portion formed at the center thereof to which a load to be detected is applied, and a strain gauge on the strain generation portion;

said case is attached to an installation plate for guiding the diaphragm type load detection sensor;

said transmission assembly transmits a load to be detected to the load applied portion of the diaphragm type load detection sensor;

said support member supports the transmission assembly on the case;

said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed;

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction;

said strain gauge has terminals provided outside of the sensing elements and is disposed on the strain generation portion in such manner that said sensing elements are positioned on the strain generation portion and said terminals are positioned on the mounting portion; and

said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

31. (Original) A load detection unit according to claim 19 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

32. (Original) A load detection unit according to claim 20 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

33. (Original) A load detection unit according to claim 21 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

34. (Original) A load detection unit according to claim 22 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

35. (Cancelled)

36. (Currently Amended) ~~A load detection unit according to claim 24 in which A~~
load detection unit comprising:

a diaphragm type load detection sensor;

a case;

a transmission assembly; and

a support member, wherein

said diaphragm type load detection sensor has a mounting portion, a strain generation portion provided on the mounting portion and a load applied portion formed at the center thereof to which a load to be detected is applied, and a strain gauge on the strain generation portion;

said case is attached to an installation plate for guiding the diaphragm type load detection sensor;

said transmission assembly transmits a load to be detected to the load applied portion of the diaphragm type load detection sensor;

said support member supports the transmission assembly on the case;

said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed;

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction;

said strain gauge has terminals provided outside of the sensing elements and is disposed on the strain generation portion in such manner that said sensing elements are positioned on the strain generation portion and said terminals are positioned on the mounting portion;

said transmission assembly is movably coupled to the load applied portion; and

said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

37. (Original) A load detection unit according to claim 25 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

38. (Original) A load detection unit according to claim 26 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

39. (Original) A load detection unit according to claim 27 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

40. (Original) A load detection unit according to claim 28 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

41. (Original) A load detection unit according to claim 30 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

42. (Original) A load detection unit according to claim 31 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

43. (Original) A load detection unit according to claim 32 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

44. (Original) A load detection unit according to claim 33 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

45. (Original) A load detection unit according to claim 34 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

46. (Cancelled)

47. (Original) A load detection unit according to claim 36 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

48. (Original) A load detection unit according to claim 37 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

49. (Original) A load detection unit according to claim 38 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

50. (Original) A load detection unit according to claim 39 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

51. (Original) A load detection unit according to claim 40 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

52. (Previously presented) An electronic scale comprising:

a diaphragm type load detection sensor;

a base;

a platform; and

a lever, wherein

said diaphragm type load detection sensor comprises: a mounting portion attached to an installation plate; a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied; and a strain gauge provided on the strain generation portion, wherein said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion,

said lever receives a load applied to the platform and transmits it to the load applied portion of the diaphragm type load detection sensor,

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed,

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction, and

said strain gauge has terminals provided outside of the sensing elements and is disposed on the strain generation portion in such manner that said sensing elements are positioned on the strain generation portion and said terminals are positioned on the mounting portion.

53-56 (Cancelled)

57. (Previously presented) An electronic scale comprising:

a diaphragm type load detection sensor;

a base;

a platform; and

a lever, wherein

said diaphragm type load detection sensor comprises: a mounting portion attached to an installation plate; a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied; and a strain gauge provided on the strain generation portion, wherein said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion,

said lever receives a load applied to the platform and transmits it to the load applied portion of the diaphragm type load detection sensor,

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed,

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction, and

said mounting portion is attached to the installation plate with a flexible resilient member interposed therebetween.

58. (Previously presented) An electronic scale according to claim 52 in which said mounting portion is attached to the installation plate with a flexible resilient member interposed therebetween.

59. (Original) An electronic scale according to claim 57 in which said flexible resilient member is formed from rubber material.

60. (Original) An electronic scale according to claim 58 in which said flexible resilient member is formed from rubber material.

61. (Original) An electronic scale according to claim 57 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

62. (Original) An electronic scale according to claim 58 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

63. (Original) An electronic scale according to claim 59 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

64. (Original) An electronic scale according to claim 60 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

65-69 (Cancelled)

70. (Previously presented) An electronic scale comprising:

a diaphragm type load detection sensor;

a base; and

a platform, wherein

said diaphragm type load detection sensor comprises: a mounting portion attached to an installation plate; a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied; and a strain gauge provided on the strain generation portion, wherein said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion,

said platform is coupled to the load applied portion of the diaphragm type load detection sensor,

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed,

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction, and

said mounting portion is attached to the installation plate with a flexible resilient member interposed therebetween.

71. (Currently Amended) ~~An electronic scale according to claim 65 in which said mounting portion is attached to the installation plate~~ An electronic scale comprising:

a diaphragm type load detection sensor;

a base; and

a platform, wherein

said diaphragm type load detection sensor comprises: a mounting portion attached to an installation plate with a flexible resilient member interposed therebetween; a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied; and a strain gauge provided on the strain generation portion, wherein said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion,

said platform is coupled to the load applied portion of the diaphragm type load detection sensor,

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed,

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction, and

said strain gauge has terminals provided outside of the sensing elements and is disposed on the strain generation portion in such manner that said sensing elements are positioned on the strain generation portion and said terminals are positioned on the mounting portion.

72. (Original) An electronic scale according to claim 70 in which said flexible resilient member is formed from rubber material.

73. (Original) An electronic scale according to claim 71 in which said flexible resilient member is formed from rubber material.

74. (Original) An electronic scale according to claim 70 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

75. (Original) An electronic scale according to claim 71 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

76. (Original) An electronic scale according to claim 72 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

77. (Original) An electronic scale according to claim 73 in which said flexible resilient member is secured to the mounting portion or the installation plate with an adhesion means, an adhesive agent, a fastening screw, a guide member, a mating connection or an integral molding process.

78-82 (Cancelled)

83. (Previously presented) An electronic scale using a load detection unit comprising:

- a diaphragm type load detection sensor;

- a case;

- a transmission assembly; and

- a support member, wherein

- said diaphragm type load detection sensor has a mounting portion, a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied, and a strain gauge provided on the strain generation portion;

- said case is attached to an installation plate for guiding the diaphragm type load detection sensor;

- said transmission assembly transmits a load to be detected to the load applied portion of the diaphragm type load detection sensor;

- said support member supports the transmission assembly on the case;

- said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed; and

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction;

the electronic scale further comprising at least one of a flexible resilient member contained in the case and interposed between the mounting portion of the diaphragm type load detection sensor and the installation plate, and another flexible resilient member provided at such side of the transmission assembly that receives a load to be detected.

84. (Currently Amended) ~~An electronic scale using a load detection unit according to claim 78 in which it further comprises~~ An electronic scale using a load detection unit comprising:

a diaphragm type load detection sensor;

a case;

a transmission assembly; and

a support member, wherein

said diaphragm type load detection sensor has a mounting portion, a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied, and a strain gauge provided on the strain generation portion;

said case is attached to an installation plate for guiding the diaphragm type load detection sensor;

said transmission assembly transmits a load to be detected to the load applied portion of the diaphragm type load detection sensor;

said support member supports the transmission assembly on the case;

said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed;

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction; and

said strain gauge has terminals provided outside of the sensing elements and is disposed on the strain generation portion in such manner that said sensing elements are positioned on the strain generation portion and said terminals are positioned on the mounting portion;

further comprising at least one of a flexible resilient member contained in the case and interposed between the mounting portion of the diaphragm type load detection sensor and the installation plate, and another flexible resilient member provided at such side of the transmission assembly that receives a load to be detected.

85. (Original) An electronic scale using a load detection unit according to claim 83 in which said at least one of the flexible resilient member or another flexible resilient member is formed from rubber material.

86. (Original) An electronic scale using a load detection unit according to claim 84 in which said at least one of the flexible resilient member or another flexible resilient member is formed from rubber material.

87-88 (Cancelled)

89. (Previously presented) An electronic scale using a load detection unit according to claim 83 in which said transmission assembly is movably coupled to the load applied portion.

90. (Previously presented) An electronic scale using a load detection unit according to claim 84 in which said transmission assembly is movably coupled to the load applied portion.

91. (Previously presented) An electronic scale using a load detection unit according to claim 85 in which said transmission assembly is movably coupled to the load applied portion.

92. (Previously presented) An electronic scale using a load detection unit according to claim 86 in which said transmission assembly is movably coupled to the load applied portion.

93. (Previously presented) An electronic scale using a load detection unit comprising:
a diaphragm type load detection sensor;
a case;
a transmission assembly; and
a support member, wherein
said diaphragm type load detection sensor has a mounting portion, a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied, and a strain gauge provided on the strain generation portion;

said case is attached to an installation plate for guiding the diaphragm type load detection sensor;

said transmission assembly transmits a load to be detected to the load applied portion of the diaphragm type load detection sensor;

said support member supports the transmission assembly on the case;

said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed;

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction; and

said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

94. (Currently Amended) ~~An electronic scale using a load detection unit according to claim 78 in which~~ An electronic scale using a load detection unit comprising:

a diaphragm type load detection sensor;

a case;

a transmission assembly; and

a support member, wherein

said diaphragm type load detection sensor has a mounting portion, a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied, and a strain gauge provided on the strain generation portion;

said case is attached to an installation plate for guiding the diaphragm type load detection sensor;

said transmission assembly transmits a load to be detected to the load applied portion of the diaphragm type load detection sensor;

said support member supports the transmission assembly on the case;

said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed;

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction;

said strain gauge has terminals provided outside of the sensing elements and is disposed on the strain generation portion in such manner that said sensing elements are positioned on the strain generation portion and said terminals are positioned on the mounting portion; and

said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

95. (Original) An electronic scale using a load detection unit according to claim 83 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

96. (Original) An electronic scale using a load detection unit according to claim 84 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

97. (Original) An electronic scale using a load detection unit according to claim 85 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

98. (Original) An electronic scale using a load detection unit according to claim 86 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

99. (Cancelled)

100. (Currently Amended) ~~An electronic scale using a load detection unit according to claim 88 in which~~ An electronic scale using a load detection unit comprising:

a diaphragm type load detection sensor;

a case;

a transmission assembly; and

a support member, wherein

said diaphragm type load detection sensor has a mounting portion, a strain generation portion provided on the mounting portion and having a load applied portion formed at the center thereof to which a load to be detected is applied, and a strain gauge provided on the strain generation portion;

said case is attached to an installation plate for guiding the diaphragm type load detection sensor;

said transmission assembly transmits a load to be detected to the load applied portion of the diaphragm type load detection sensor;

said support member supports the transmission assembly on the case;

said strain gauge has sensing elements evenly provided on substantially a whole periphery thereof and positioned at predetermined distances from the center axis of the load applied portion of the strain generation portion;

a projection is formed on the load applied portion at the center axis thereof and said sensing elements are provided on a surface of the strain generation portion at such side that is opposite to the side where said projection is formed;

said sensing elements have a pattern wherein the sensing element is disposed to receive a strain in the peripheral direction and a pattern wherein the sensing element is disposed to receive a strain in the radial direction;

said strain gauge has terminals provided outside of the sensing elements and is disposed on the strain generation portion in such manner that said sensing elements are positioned on the strain generation portion and said terminals are positioned on the mounting portion;

said transmission assembly is movably coupled to the load applied portion; and

said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

101. (Original) An electronic scale using a load detection unit according to claim 89 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

102. (Original) An electronic scale using a load detection unit according to claim 90 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

103. (Original) An electronic scale using a load detection unit according to claim 91 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

104. (Original) An electronic scale using a load detection unit according to claim 92 in which said support member is a leaf spring including an outer peripheral strip permanently coupled to the case, an inner peripheral strip freely coupled to the transmission assembly, and flexible strips for coupling therebetween.

105. (Original) An electronic scale using a load detection unit according to claim 94 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

106. (Original) An electronic scale using a load detection unit according to claim 95 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

107. (Original) An electronic scale using a load detection unit according to claim 96 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

108. (Original) An electronic scale using a load detection unit according to claim 97 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

109. (Original) An electronic scale using a load detection unit according to claim 98 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

110. (Cancelled)

Application No.: 10/687,700

111. (Original) An electronic scale using a load detection unit according to claim 100 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

112. (Original) An electronic scale using a load detection unit according to claim 101 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

113. (Original) An electronic scale using a load detection unit according to claim 102 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

114. (Original) An electronic scale using a load detection unit according to claim 103 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.

115. (Original) An electronic scale using a load detection unit according to claim 104 in which said flexible strips are plural beams formed in the direction of rotation about the center axis of the inner peripheral strip.